

SANDBAGS AS A TECHNICAL AID IN MOUNTING PLANTS. — Sandbags as an aid in mounting plants with glue have recently been tested at the University of Michigan and found to be not only important timesavers, but also a more dependable source of pressure for good mounts. Such bags have been used for years at Kew Herbarium in England. Because of their relative novelty in this country and their proven effectiveness, it was thought that a description of their design and function might be helpful.

When plants are mounted with glue, it is necessary to press them firmly against the herbarium sheet until the glue is dry to achieve good adhesion. Obviously, portions which are able to spring away from the paper will not be fastened securely. If specimens are thin and flat this presents no difficulty. But if they have thick parts that interfere with applying pressure to the thinner parts, some ingenuity is required to insure good contact everywhere. A hickory branchlet with nuts and heavy stems, for example, needs extra care on the leafy portions, so that fruits, stems, and leaves will alike be properly pressed against the paper.

One way to equalize the uneven surfaces of such a specimen is to add pads of appropriate thickness to the thinner portions until a relatively level surface is presented to the applied weight. The pads may be made of folded newsprint, or some other suitable material. This method gives satisfactory results, but often demands a burdensome amount of attention and time.

Sandbags offer a much quicker and simpler solution. After a specimen is undercoated with glue, placed on a herbarium sheet, blotted, and covered with a waxed paper, a sandbag, which is the equivalent of both weight and pads, is laid over it. Fingertips can readily force it to bear down closely on each leaf, fruit, or stem. The bag's lower surface is made to accommodate itself to the contours of the plant, and its upper surface can be neatly smoothed to receive subsequent layers in the stack of processed specimens. Pressure is distributed effectively across each sheet, and from layer to layer. While it is possible to place another herbarium sheet and specimen directly upon the preceding sandbag, it



has been found preferable to insert first a thin section of plywood or fibreboard, or even heavy cardboard, to provide a more rigid area of support. Each glued sheet should rest on a flat, inflexible surface to prevent warping. It is also desirable to place a blotter under each sheet to help remove moisture introduced by the glue. Leaving the bags in place overnight is usually long enough, unless the atmosphere is exceedingly humid. Plants which did not receive proper pressing when collected are greatly improved in flatness and general appearance after treatment with glue and sandbags.

Though the idea of using sandbags as weights was borrowed from Kew, those described here are of a somewhat modified design. Ours at the University of Michigan resemble flat pillows, about 1½ inches thick, slightly wider and longer than standard American herbarium sheets. Tightly woven unbleached muslin was chosen for the fabric, as this material seemed to offer the best combination of strength and flexibility. Mined silica sand was used as the filler, because it is white and relatively dirt-free. A small but perceptible amount of dust unavoidably escapes through the cloth when the bags are kneaded or shifted about. A standard width of muslin available for making bedsheets, 81 inches, was found to yield six bags per yard without waste. Each third of a half-yard, folded and closed with double-stitched half-inch seams, and filled with 12 pounds of sand made a pillow of exactly the right dimensions and maneuverability.

Cost of materials averaged about 29 cents for each bag. The muslin was a dollar a yard, and the sand \$1.39 per hundred pounds. About 18 hours of labor were necessary for cutting, sewing, and filling 54 bags.

If specimens are particularly bulky, and a separate bag is required for every sheet, a mounter may need 35 to 50 bags in a full day of gluing. It appears from our preliminary tests that a worker's output when doing specimens of this type is approximately doubled. The sandbag method is not only quicker, but far less arduous. It appeals greatly to mounters because countless small decisions and stratagems are no longer necessary. The annoyance of providing prop-



# Rhodora

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